DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 3, 4, 10, 12, 13, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kondo et al. (US 7310373 B2, hereinafter referred to as "Kondo").

Re **claim 1**, Kondo discloses a picture encoding method that encodes picture information for each area by generating prediction pictures from picture information of frames that have been previously encoded, the method comprising: a motion vector selection step that selects a motion vector from a plurality of motion vectors that have been stored in advance (Kondo: Fig. 1, mode selection unit 109 and motion vector storage unit 116; column 26, line 51-column 27, line 3, vectors selected depending on mode); a prediction picture generation step that generates a prediction picture from a reference picture using the motion vector selected by the motion vector selection step (Kondo: Fig. 1, difference calculation unit 102); and a differential encoding step that encodes a difference between the picture information of the present area and the prediction picture (Kondo: Fig. 1, difference calculation unit 102 and prediction error coding unit 103).

Re **claim 3**, Kondo discloses a motion vector designation encoding step that encodes information that designates the motion vector selected by the motion vector selection step (Kondo: column 30, lines 56-62, coding mode Ms is added to the bit stream).

Re **claim 4**, Kondo discloses a picture encoding method that encodes picture information for each area by selecting a reference picture from picture information of a plurality of frames that have been previously encoded and generating a prediction picture, the method comprising: a reference motion vector setting step that sets a correspondence relation between a plurality of motion vectors that have been stored in advance and reference picture designation information that designates a reference picture (Kondo: Fig. 1, mode selection unit 109 and motion vector storage unit 116); a reference picture selection step that selects the reference picture (Kondo: column 26, lines 41-50); a reference picture designation encoding step that encodes the reference picture designation information that designates the reference picture (Kondo: column 27, lines 25-28, coding mode sent to bit stream generator; column 30, lines 56-62, coding mode Ms is added to the bit stream); a motion vector selection step that selects a motion vector corresponding to the reference picture designation information from the plurality of motion vectors that have been stored in advance (Kondo: column 26, line 51-column 27, line 3, vectors selected depending on mode); a prediction picture generation step that generates a prediction picture from the reference picture using the motion vector selected by the motion vector selection step (Kondo: Fig. 1, difference calculation unit 102); and a differential encoding step that encodes a difference between the picture information of the present area and the prediction picture (Kondo: Fig. 1, prediction error coding unit 103).

Claim 10 recites the corresponding inverse decoding method for decoding the picture information generated by the encoding method of claim 1. Arguments analogous to those presented for claim 1 are applicable to claim 10. Therefore, claim 10 has been analyzed and rejected with respect to claim 1 above.

Re **claim 12**, arguments analogous to those presented for claim 3 are applicable to claim 12. Therefore, claim 12 has been analyzed and rejected with respect to claim 3 above.

Claim 13 recites the corresponding inverse decoding method for decoding the picture information generated by the encoding method of claim 4. Arguments analogous to those presented for claim 4 are applicable to claim 13. Therefore, claim 13 has been analyzed and rejected with respect to claim 4 above.

Claim 19 recites the corresponding encoding apparatus for implementing the encoding method of claim 1. Therefore, claim 19 has been analyzed and rejected with respect to claim 1 above.

Claim 20 recites the corresponding decoding apparatus for implementing the decoding method of claim 10. Therefore, claim 20 has been analyzed and rejected with respect to claim 10 above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 5-9, 11, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (US 7310373 B2) in view of Kato (US 5701164 A).

Re **claim 2**, Kondo does not specifically disclose that the motion vector selection step selects the motion vector from the plurality of motion vectors in accordance with position information of areas within a screen. However, Kato discloses a system for macroblock coding including difference between motion vectors, wherein block matching is performed by comparing portions of a current frame to a search area in a reference frame in order to determine a minimum difference so as to select a vector from multiple candidates (Kato: column 16, lines 56-column 17, lines 15), as is well known in the art. Since both Kondo and Kato relate to motion vector selection with error prediction, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the block matching and scaling of Kato with the system of Kondo in order to simplify the difference determination involved in motion estimation (Kato: column 12, lines 38-55).

Re **claim 5**, Kondo discloses a detected motion vector encoding step that, when the motion vector obtained in the motion detection step is selected by the detected motion vector selection step, encodes the motion vector (Kondo: column 30, lines 56-62, motion vector MVp is added to the bit stream); and a detected motion vector designation encoding step that encodes information designating the motion vector selected by the detected motion vector selection step (Kondo: column 30, lines 56-62, coding mode Ms is added to the bit stream).

Kondo does not explicitly disclose a motion detection step that detects a motion vector using the picture information of the present area and the reference picture; and a detected motion vector selection step that selects either of the motion vector selected by the motion vector selection step or the motion vector obtained in the motion detection step. However, Kato discloses a system for macroblock coding including difference between motion vectors, wherein block matching is performed by comparing portions of a current frame to a search area in a reference frame in order to determine a minimum difference so as to select a vector from multiple candidates (Kato: column 16, lines 56-column 17, lines 15), as is well known in the art. Since both Kondo and Kato relate to motion vector selection with error prediction, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the block matching and scaling of Kato with the system of Kondo in order to simplify the difference determination involved in motion estimation (Kato: column 12, lines 38-55).

Re **claim 6**, Kondo discloses a motion detection step that detects a motion vector using the picture information of the present area and the reference picture (Kondo: column 26, lines 31-50); but Kondo does not specifically disclose a differential motion vector encoding step that encodes the difference between the motion vector selected by the motion vector selection step and the motion vector obtained in the motion detection step. However, Kato discloses a system for macroblock coding including difference between motion vectors, wherein a vector difference is determined and encoded (Kato: column 19, lines 24-34). Since both Kondo and Kato relate to motion vector selection with error prediction, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the block matching and scaling of Kato with the system of Kondo in order to simplify the difference determination involved in motion estimation (Kato: column 12, lines 38-55).

Re **claim 7**, Kondo discloses a motion vector storage step that stores motion vectors; a motion vector storage decision step that decides whether or not to store a motion vector (Kondo: Fig. 1, vectors are stored in motion vector storage unit 116); and a motion vector storage designation encoding step that encodes information that designates whether or not to store a motion vector (Kondo: column 26, line 51-column 27, line 3).

Re **claim 8**, Kondo discloses a motion vector storage step that stores motion vectors (Kondo: Fig. 1, vectors are stored in motion vector storage unit 116), but Kondo does not specifically disclose a motion vector scaling step that changes the value of the motion vector using motion vector scaling information. However, Kato discloses a system for macroblock coding including difference between motion vectors, wherein vector scale conversion is performed (Kato: Fig. 2). Since both Kondo and Kato relate to motion vector selection with error prediction, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the block matching and scaling of Kato with the system of Kondo in order to simplify the difference determination involved in motion estimation (Kato: column 12, lines 38-55).

Re **claim 9**, Kondo does not specifically disclose a scaling encoding step that encodes the motion vector scaling information. However, Kato discloses a system for macroblock coding including difference between motion vectors, wherein vector scale conversion is performed (Kato: Fig. 2), and the resultant difference motion vector is sent to a variable length coder (Kato: Fig. 1, S50 sent from vector difference element 27 to VLC element 20). Since both Kondo and Kato relate to motion vector selection with error prediction, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the block matching and scaling of Kato with the system of Kondo in order to simplify the difference determination involved in motion estimation (Kato: column 12, lines 38-55).

Re **claim 11**, arguments analogous to those presented for claim 2 are applicable to claim 11. Therefore, claim 11 has been analyzed and rejected with respect to claim 2 above.

Re **claim 14**, arguments analogous to those presented for claim 5 are applicable to claim 14. Therefore, claim 14 has been analyzed and rejected with respect to claim 5 above.

Re **claim 15**, arguments analogous to those presented for claim 6 are applicable to claim 15. Therefore, claim 15 has been analyzed and rejected with respect to claim 6 above.

Re **claim 16**, arguments analogous to those presented for claim 7 are applicable to claim 16. Therefore, claim 16 has been analyzed and rejected with respect to claim 7 above.

Re **claim 17**, arguments analogous to those presented for claim 8 are applicable to claim 17. Therefore, claim 17 has been analyzed and rejected with respect to claim 8 above.

Re **claim 18**, arguments analogous to those presented for claim 9 are applicable to claim 18. Therefore, claim 18 has been analyzed and rejected with respect to claim 9 above.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER FINDLEY whose telephone number is (571)270-1199. The examiner can normally be reached on Monday-Friday (8:30 AM-5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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